ABSTRACT

A system and method of simulating a PC platform are disclosed. The PC platform includes a CPU, a chipset, memory and IO devices. The machine instructions of a target CPU are simulated by several simulation modules. The simulation modules include a monitor that translates the machine instructions into translated code and performs virtualization of the target CPU state. The monitor protects the translated code by using a segmentation mechanism. The simulation modules also include a virtual machine that executes the translated code, and a kernel that detects exceptions occurring in the virtual machine and transfers control between the virtual machine and the monitor according to a type of the exceptions. Most of the simulated instructions, including those that access the memory, are executed directly to achieve high simulation speed.